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(71) Applicant (for all designated States except US): NANOSPHERE INC. [US/US]; 1818 Skokie Boulevard, Northbrook, IL 60062 (US).

(72) Inventors; and

(75) Inventors/Applicants (for US only): STORHOFF, James, J. [US/US]; 1735 Washington Street, Evanston, IL 60202 (US). LETSINGER, Robert, L. [US/US]; 1034 Sassafras Circle, Bloomington, IN 47408 (US). HAGENOW, Susan, R. [US/US]; 22241 85th Place, Salem, WI 53168 (US).

(74) Agent: MIAO, Emily; McDonnell Boehnen Hulbert & Berghoff, 300 South Wacker Drive, Suite 3200, Chicago, IL 60606 (US).

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(54) Title: NANOPARTICLE POLYANION CONJUGATES AND METHODS OF USE THEREOF IN DETECTING ANALYTES

(57) **Abstract:** This invention provides polyanionic polymer conjugates containing non-nucleotide polyanionic polymers that are useful in detecting target analytes such as proteins or small molecules. The invention also provides nanoparticle bound to polyanionic polymer conjugates and methods of preparation and use thereof. The polyanionic polymer conjugates have the formula: L-O[PO<sub>2</sub>-O-Z-O]<sub>n</sub>-PO<sub>2</sub>-O-X wherein n ranges from 1 to 200; L represents a moiety comprising a functional group for attaching the polyanion polymer to the nanoparticle surface; Z represents a bridging group, and X represents Q, X' or -Q-X', wherein Q represents a functional group for attaching a recognition probe to the polyanion polymer, and X' represents a recognition probe.

**INTERNATIONAL SEARCH REPORT**

International application No.

PCT/US03/21021

**A. CLASSIFICATION OF SUBJECT MATTER**

IPC(7) : C12Q 1/68; C07H 21/00, 21/02, 21/04  
US CL : 435/6; 536/22.1, 23.1, 24.3, 25.3

According to International Patent Classification (IPC) or to both national classification and IPC

**B. FIELDS SEARCHED**

Minimum documentation searched (classification system followed by classification symbols)  
U.S. : 435/6; 536/22.1, 23.1, 24.3, 25.3

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)  
Please See Continuation Sheet

**C. DOCUMENTS CONSIDERED TO BE RELEVANT**

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
Y	US 6,214,560 B1 (YGUERABIDE et al) 10 April 2001, see entire document.	1-50
Y	US 4,996,143 A (HELLER et al) 26 February 1991, see entire document.	1-50

Further documents are listed in the continuation of Box C.

See patent family annex.

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"A"	document defining the general state of the art which is not considered to be of particular relevance	"X"	document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone
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"O"	document referring to an oral disclosure, use, exhibition or other means		
"P"	document published prior to the international filing date but later than the priority date claimed		

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Mail Stop PCT, Attn: ISA/US  
Commissioner for Patents  
P.O. Box 1450  
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Facsimile No. (703)305-3230

Authorized officer

Jezia Riley

Telephone No. 703-308-0196

INTERNATIONAL SEARCH REPORT

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**Continuation of B. FIELDS SEARCHED Item 3:**

**STN**

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